

MEMOIRS
OF THE
GEOLOGICAL SURVEY
OF
THE UNITED KINGDOM.

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*Figures and Descriptions*

ILLUSTRATIVE OF  
BRITISH ORGANIC REMAINS.

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DECADE V.  
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BRITISH FOSSILS.

DECADE THE FIFTH.

IN apologizing for the unavoidable delay which has taken place in the publication of this Decade, owing to the much lamented decease of Professor Edward Forbes, it is right to state that the materials left behind by him were scanty, and had been unfortunately mislaid a short time before his death. The first description only, that of *Solaster Moretonis*, had been fully written by him; of the others, we had here and there notes on the distinctive characters of the species, and of his views as to their synonymy or history. The plates, however, had been all engraved under his own eye, and the specific designations under which he wished the figures to stand, were recorded in the last edition of Morris's Catalogue. He had there also applied MS. names to a number of species to be described in the Decade.

In a few cases only it has been found necessary to alter some of these names; and this has been done in deference to an authority which would have been gladly admitted by Professor Forbes. To Mr. S. P. Woodward, of the British Museum, we are indebted for all the notes respecting these supplementary species; and he has also furnished full descriptions of three of the plates. With this valuable aid, and the friendly communications of Dr. T. Wright, of Cheltenham, we can present the Decade in nearly as complete a form as it would have possessed had our friend and Master lived to finish it. We miss, however, his lively remembrance of the living species, and his practical acquaintance with their variations,—deficiencies not to be supplied by reference to his published works.

Of the ten species figured three are new,—*Solaster Moretonis*, *Cidaris Carteri*, and *Pygaster conoideus*. Of the other genera, *Diadema*, *Echinopsis*, and *Echinus* present us with well-known types from the Oolitic rocks, which are continental as well as British. *Pyrina* is a rare genus in England, and in this, and the two figured species of *Pygaster*, we have excellent examples of that division of the *Cassidulidae* in which the ambulacra are of uniform character throughout. Several genera of this type have been figured in the Decades. The *Pygaster semisulcatus* is a critical species, and its synonymy is now for the first time cleared up. *Hemiaster Murchisonia* is another instance of the same kind, and belongs to a large genus of closely allied species. The *Brissus Scillæ* is a Crag species still existing in the Mediterranean. None of these nine genera have before appeared in the Decades.

There are engraved plates sufficient for another fasciculus, upon which Professor Forbes left no memoranda, except the names of the species. These Plates will be published at a future period.

JOHN W. SALTER,
Palæontologist.

Geological Survey Office, Jermyn Street, London,
February 1856.

BRITISH FOSSILS.

DECADE V. PLATE VI. Fig. A.

PYRINA DESMOULINSII, var. PRATTII.

[Genus PYRINA. DESMOULINS, 1835. (Sub-kingdom Radiata. Order Echinodermata. Family Cassidulidæ.) Body oval, tumid, flattened above and below; ambulacra simple, continuous, radiant; mouth central inferior, elliptical; anus posterior, supra-marginal; tubercles perforate; genital pores four.]

DIAGNOSIS. *P. testâ tumidâ, ambitu elliptico postice leviter emarginato; vertice depresso; basi subconcavâ; ano in medio faciei posticæ excavato.*

REFERENCES. *Pyrina Desmoulinsii*, D'ARCHIAC (1847), Mem. Soc. Geol. France, 2nd ser. t. ii. pl. 2. p. 297., pl. 13. fig. 4.; D'Orb. Prodr. 2., p. 78.; Agass. Cat., p. 92. *Pyrina Prattii*, FORBES, Morris's Catal., 2nd edit. (1854), p. 88.

Several members of the family *Cassidulidæ* have been already presented in the Decades, more particularly of that division of it which has simple, instead of petaloid ambulacra—*Disaster*, *Galerites*, *Hyboclypus*. The species having this character (the *Echinoneides* of Agassiz) are abundant in the cretaceous rocks; two out of three sections of the genus *Galerites* are quite characteristic of the Chalk and Green Sand.

Pyrina, which differs from *Galerites* chiefly in its oblong instead of circular outline, is a genus of rather small, and generally very convex urchins. It is difficult to distinguish from it those abnormal specimens of *Galerites* upon which M. Desor founded the spurious genus *Globator*. Such specimens occur in the Upper Chalk of Kent, and Upper Green Sand of Warminster, and differ from *Pyrina* solely in their more circular forms.

Description.—The original example of *Pyrina Desmoulinsii*, figured and described by M. le Vicomte d'Archiac, in his "Rapport sur les Fossiles du Tourtia," measures 22 mill. in length, 16 mill. transversely, and $11\frac{1}{2}$ in height. The specimen now figured measures 24 mill. long, 19 wide, 12 high, and is therefore wider,

and rather more depressed in relation to its length, than the typical example.

These differences are equally manifest in other specimens,—one British and three Belgian,—in the cabinets of Dr. Wright and the British Museum. In all the foreign specimens, when viewed from above, the outline is notched posteriorly by the vent; in the English specimens this is less distinctly the case, the anal opening being rather higher up, though not so high as in the Neocomian *P. pygæa*.

These differences are so slight, and the materials so scanty, that it will be better to treat them as indicating varieties only of one species.

Locality and Geological Position.—Mr. Pratt's specimen, and another in the cabinet of Dr. Wright, were obtained from the CHALK with quartz grains at Chard, Somersetshire.

The foreign examples are from the UPPER GREEN SAND (Tourtia) of Tournay, Belgium.

PLATE VI. Fig. B.

PYRINA OVULUM.

DIAGNOSIS. "*P. ovata, inflata, superne depressa; ambitu elliptico, basi plana, margine valde tumido; ore elongato obsolete decagono; facie posticâ late sulcatâ; ano elliptico, margini superiori proximo; tuberculis numerosis.*" —(DESOR).

SYNONYMS. *Nucleolites ovulum*, LAMARCK, Anim. sans Vert., vol. iii. 37. GOLDFUSS, Petr., 1. p. 138. t. xliii. f. 2. DESMOULINS, Ech., p. 356. *Pyrina ov.*, AGASSIZ (1847), Catal. Syst. Ectyp., p. 7. DESOR, Monogr. des Galei, p. 26. pl. 5. fig. 35–37. ; Morris's Catal., 2nd edit. p. 88.

Locality and Geological Position.—LOWER CHALK, Dorsetshire, (sec. Morris's Catalogue.)

Foreign Locality.—CHALK of St. Christophe and Tours, Department Indre and Loire.

EXPLANATION OF PLATE VI.

A. *Pyrina Desmoulinsii*, var. *Prattii*.

- Fig. 1. Upper view of Mr. Pratt's specimen.
- Fig. 2. Side view.
- Fig. 3. Under view.
- Fig. 4. Posterior end.
- Fig. 5. Tubercles of the upper surface, magnified.
- Fig. 6. Do. and granules of the lower face.

Fig. 7. Portion of the under surface magnified, showing the triplication of the pores near the mouth.

Fig. 8. Form of the mouth, magnified.

Fig. 9. Form of the vent.

Fig. 10. Plates of the apical disk, magnified.

B. Pyrina ovulum, Ag.

Fig. 11. Upper view.

Fig. 12. Under view.

Fig. 13. Side view.

Fig. 14. Posterior end.

Fig. 15. Tubercles and granules from the upper side, magnified.

Fig. 16. Do. do. from the base.

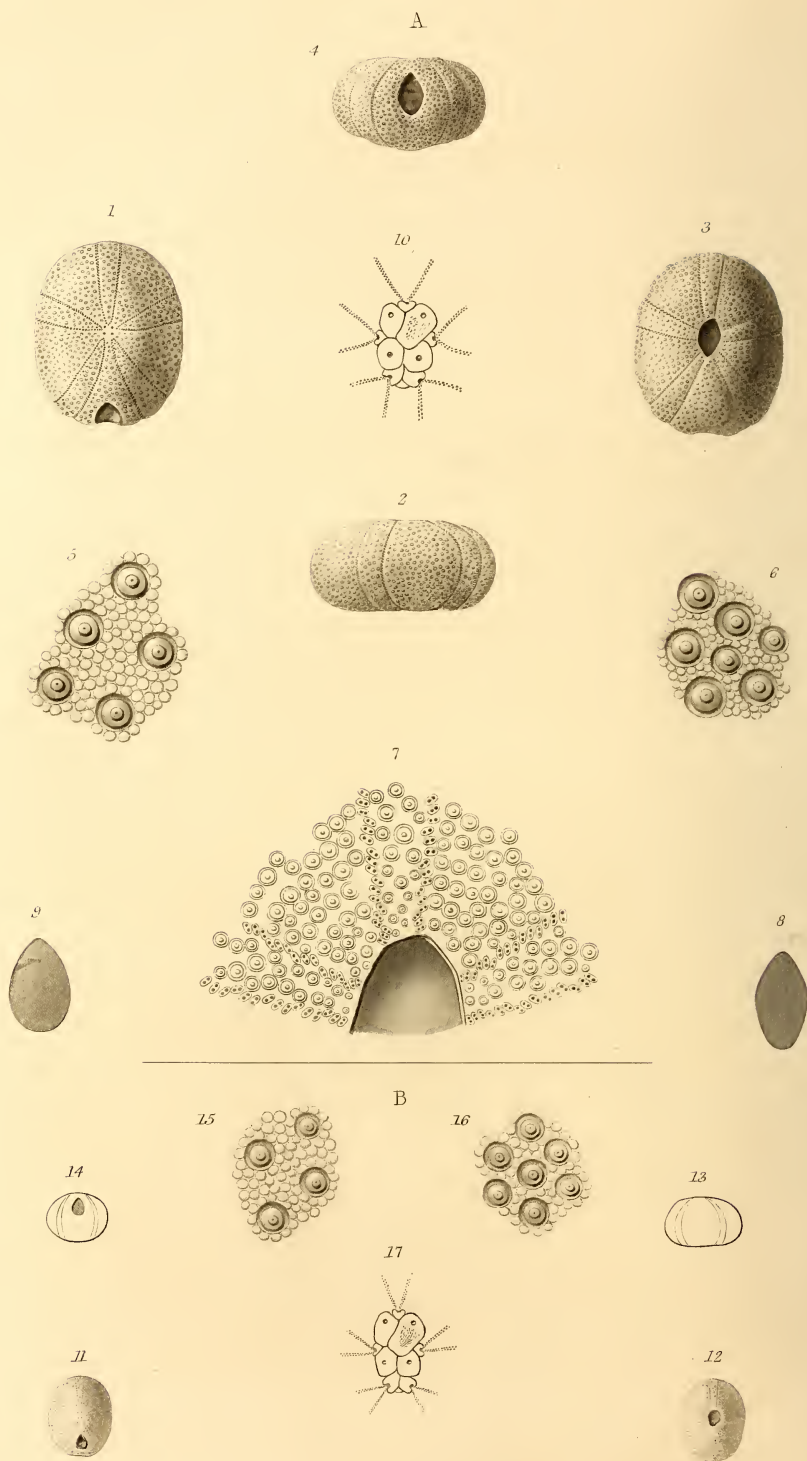
Fig. 17. Apical disk, magnified.

S. P. WOODWARD.

March 1856.

Geological Survey of the United Kingdom.

PYRINA.
(Cretaceous)



A PYRINA DESMOULINSII *D'Archiac*, VAR. PRATTII — *Forbes*.

B ——— OVULUM ——— *Lamarck*.